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(54) SILICON-BASED BLOCK COPOLYMER AND MEMBRANE MADE THEREOF (57) Abstract:

PURPOSE: To obtain a new copolymer giving a separation membrane having high gas transmission coefficient by reacting two kinds of siloxanediols with a diisocyanate and a carbonate diol.

CONSTITUTION: The objective block copolymer is produced by using (A) a siloxanedial of formula I (R1 and R2 are bivalent hydrocarbon group; R3 is methyl or phenyl; (1) is ≥8), (B) a siloxanedial of formula II ((m) is ≥8), (C) a diisocyanate of formula III (R4 is aliphatic

group, alicyclic group or aromatic group) and (D) a carbonate diol of formula IV (R5 is aliphatic group; (n) is ≥3) as starting raw materials, dissolving the component C in an organic solvent, reacting with the component A and the component B in nitrogen gas stream and finally

adding and reacting the component D to the above reaction product.

$$HD-R_1 = 0-R_2 + \frac{R_2}{R_3} = 0$$
 $R_2 = 0-R_1 = 0$ $R_2 = 0$ $R_3 = 0$ $R_4 = 0$